## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 20 October 2005 (20.10.2005)

## (10) International Publication Number WO 2005/099275 A3

- (51) International Patent Classification: *H04N 7/36* (2006.01) *H04N 7/26* (2006.01) *H04N 7/46* (2006.01)
- (21) International Application Number:

PCT/US2005/010436

- **(22) International Filing Date:** 31 March 2005 (31.03.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/558,862 2 April 2004 (02.04.2004) US
- (71) Applicant (for all designated States except US): THOM-SON RESEARCH FUNDING CORPORATION [US/US]; 10330 North Meridian Street, INH 340, Indianapolis, IN 46290 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BOYCE, Jill, MacDonald [US/US]; 3 Brandywine Court, Manalapan, NJ 07726 (US). TOURAPIS, Alexandros, Michael [GR/US]; 1550 Vista Club Circle #304, Santa Clara, CA 95054 (US).

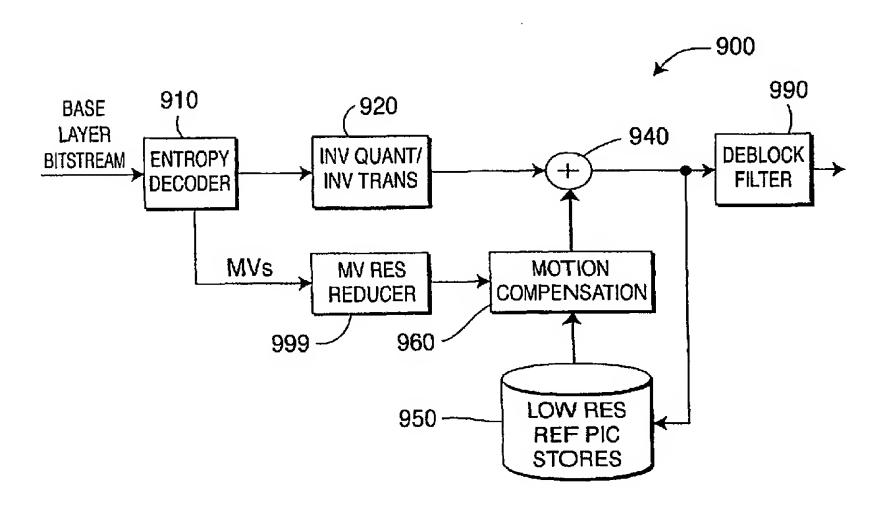
- (74) Agents: TRIPOLI, Joseph, S. et al.; Thomson Licensing Inc., Two Independence Way, Suite #200, Princeton, NJ 08540 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## **Published:**

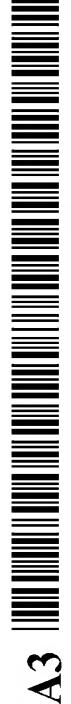
— with international search report

[Continued on next page]

(54) Title: COMPLEXITY SCALABLE VIDEO DECODING



(57) Abstract: A video decoder, a video decoding method, a video encoder and a video encoding method are disclosed. A video decoder for decoding a video bitstream for an image block includes a motion vector resolution reducer (999) and a motion compensator (960). The motion vector resolution reducer is for receiving decoded high resolution motion vectors included in the video bitstream and for reducing an accuracy of the high resolution motion vectors to correspond to a low resolution. The motion compensator, in signal communication with the motion vector resolution reducer, is for forming a motion compensated high resolution prediction using the reduced accuracy motion vectors. The video encoder for encoding scalable video comprises a motion compensator (1190) for forming a motion compensated full resolution prediction and combining combining (1105) the motion compensated full resolution prediction from an image block to form a prediction residual. The prediction residual is downsampled (1112) to form a low resolution downsampled prediction residual and then coded (1115).



99275

## WO 2005/099275 A3



(88) Date of publication of the international search report: 16 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.